

What is claimed is:

1. A monitoring device used between a reaction equipment and a computer, the monitoring device comprising:

a detector detecting the reaction action proceeded in the reaction equipment and outputting a detected value;

an abnormal state assessor in communication with the detector, giving an abnormal signal when the detected value is in the range of an abnormal state; and

a signal transmission channel electrically connected with the detector and/or the abnormal state assessor, transmitting the detected value and/or the abnormal signal to the computer for processing, the signal transmission channel supporting the computer's plug and play function.

2. The monitoring device as described in claim 1, wherein the detector is at least one of a temperature detector, a pressure detector, an oxygen content detector, a pH value detector, a whisking speed detector, a gas flux detector, a liquid level detector, a transfusion device detector, a valve ON-and-OFF detector, a power cut detector, a cell density detector, a gas detector, a slotware or pipeline breakage detector, a dextrose or sucrose detector or an online real-time analytical sampling device detector, the detector detecting the reaction action proceeded in the reaction equipment and outputting at least one of a detected temperature value, a detected pressure value, a detected oxygen content value, a detected pH value, a whisking speed variation control signal, a gas flux variation control signal, a liquid level variation control signal, a transfusion device control signal, a value ON-and-OFF control signal, a power cut responsive control signal, a cell density variation control signal, a gas concentration control signal, a slotware or pipeline breakage responsive control signal, a dextrose or sucrose variation control signal or an online real-time analytical sampling device control signal.

3. The monitoring device as described in claim 1, wherein the reaction equipment, which the monitoring device is applied to, is a chemical reaction equipment, a fermentation reaction equipment, a microbe culture equipment, a polymerase chain reaction, a reverse transcriptase polymerase chain reaction, a real time polymerase chain reaction or a separation purification equipment.

4. The monitoring device as described in claim 1, wherein the signal transmission channel is a USB or an IEEE1394 bus, a LAN (Local Area

Network) bus or a CAN (Controller Area Network) bus.

5. A monitoring device used between a reaction equipment and a computer, the monitoring device comprising:

- a detector detecting the reaction action proceeded in the reaction equipment and outputting a detected value;

- an abnormal state assessor in communication with the detector, giving an abnormal signal when the detected value is in the range of an abnormal state; and

- a signal transmission channel electrically connected between the detector and/or the abnormal state assessor and the computer, transmitting a control instruction outputted by the computer to the detector and/or the abnormal state assessor for controlling, the signal transmission channel supporting the computer's plug and play function.

6. A monitoring device used between a reaction equipment and a computer, the monitoring device comprising:

- a detector detecting the reaction action proceeded in the reaction equipment and outputting a detected value;

- an abnormal state assessor in communication with the detector, giving an abnormal signal when the detected value is in the range of an abnormal state; and

- an insertable and removable data storage device in communication with the detector and/or the abnormal state assessor, the insertable and removable data storage device storing the data outputted by the detector and/or the abnormal state assessor and allowing insertion and removal by the user.

7. The monitoring device as described in claim 6, further comprising a signal transmission channel electrically connected between the insertable and removable data storage device and the computer, transmitting the data stored in the insertable and removable data storage device to the computer for storage, the signal transmission channel supporting the computer's plug and play function.

8. A monitoring device used between a reaction equipment and a computer, the monitoring device comprising:

- a detector detecting the reaction action proceeded in the reaction equipment and outputting a detected value; and

- a signal transmission channel electrically connected between the

detector and the computer, transmitting the detected value to the computer for processing, the signal transmission channel supporting the computer's plug and play function.

9. The monitoring device as described in claim 8, wherein the detector is at least one of a temperature detector, a pressure detector, an oxygen content detector, a pH value detector, a whisking speed detector, a gas flux detector, a liquid level detector, a transfusion device detector, a valve ON-and-OFF detector, a power cut detector, a cell density detector, a gas detector, a slotware or pipeline breakage detector, a dextrose or sucrose detector or an online real-time analytical sampling device detector, the detector detecting the reaction action proceeded in the reaction equipment and outputting at least one of a detected temperature value, a detected pressure value, a detected oxygen content value, a detected pH value, a whisking speed variation control signal, a gas flux variation control signal, a liquid level variation control signal, a transfusion device control signal, a valve ON-and-OFF control signal, a power cut responsive control signal, a cell density variation control signal, a gas concentration control signal, a slotware or pipeline breakage responsive control signal, a dextrose or sucrose variation control signal or an online real-time analytical sampling device control signal.

10. The monitoring device as described in claim 8, wherein the reaction equipment, which the monitoring device is applied to, is a chemical reaction equipment, a fermentation reaction equipment, a microbe culture equipment, a polymerase chain reaction, a reverse transcriptase polymerase chain reaction, a real time polymerase chain reaction or a separation purification equipment.

11. The monitoring device as described in claim 8, wherein the signal transmission channel is a USB or an IEEE1394 bus, a LAN (Local Area Network) bus or a CAN (Controller Area Network) bus.

12. A monitoring device used between a reaction equipment and a computer, the monitoring device comprising:
a detector detecting the reaction action proceeded in the reaction equipment and outputting a detected value; and
a signal transmission channel electrically connected between the detector and the computer, transmitting a control instruction outputted by the computer to the detector for controlling, the signal transmission channel

supporting the computer's plug and play function.

13. A monitoring device used between a reaction equipment and a computer, the monitoring device comprising:

a detector detecting the reaction action proceeded in the reaction equipment and outputting a detected value; and

an insertable and removable data storage device in communication with the detector, storing the detected value outputted by the detector and allowing insertion and removal by the user.